

Connections

Estimate the square root to one decimal place *without* using the $\sqrt{\quad}$ key on your calculator. Then, tell whether the number is rational or irrational.

13. $\sqrt{121}$

14. $\sqrt{0.49}$

15. $\sqrt{15}$

16. $\sqrt{1,000}$

Two cars leave the city of Walleroo at noon. One car travels north and the other travels east. Use this information for Exercises 17 and 18.



17. Suppose the northbound car is traveling at 60 miles per hour and the eastbound car is traveling at 50 miles per hour. Make a table that shows the distance each car has traveled and the distance between the two cars after 1 hour, 2 hours, 3 hours, and so on. Describe how the distances are changing.
18. Suppose the northbound car is traveling at 40 miles per hour. After 2 hours, the cars are 100 miles apart. How fast is the other car going? Explain.

Write each fraction as a decimal and tell whether the decimal is terminating or repeating. If the decimal is repeating, tell which digits repeat.

19. $\frac{2}{5}$

20. $\frac{3}{8}$

21. $\frac{5}{6}$

22. $\frac{35}{10}$

23. $\frac{8}{99}$

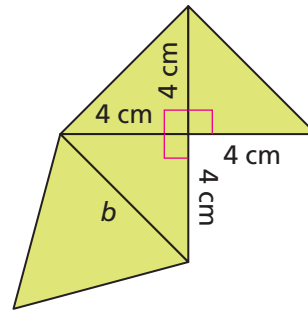
Tell whether a triangle with the given side lengths is a right triangle. Explain how you know.

24. 5 cm, 7 cm, $\sqrt{74}$ cm

25. $\sqrt{2}$ ft, $\sqrt{7}$ ft, 3 ft

26. The figure at the right is a net for a pyramid.

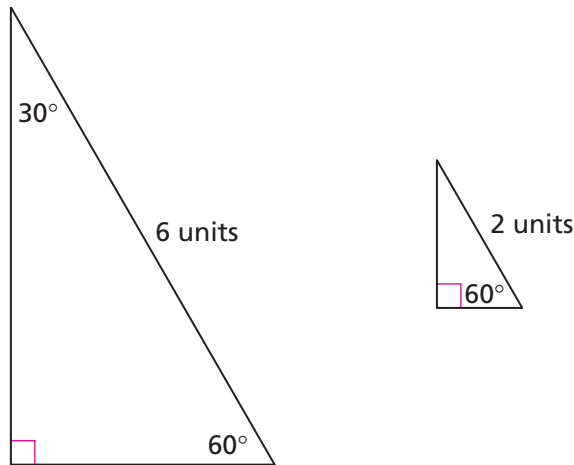
- What is the length of side b ?
- Sketch the pyramid.
- What is the surface area of the pyramid?



27. **Multiple Choice** Which set of irrational numbers is in order from least to greatest?

- $\sqrt{2}$, $\sqrt{5}$, $\sqrt{11}$, π
- $\sqrt{2}$, $\sqrt{5}$, π , $\sqrt{11}$
- $\sqrt{2}$, π , $\sqrt{5}$, $\sqrt{11}$
- π , $\sqrt{2}$, $\sqrt{5}$, $\sqrt{11}$

28. In Problem 4.3, you found the side lengths of the triangle on the left.



- Explain how you know the triangle on the right is similar to the triangle on the left.
- Use the side lengths of the larger triangle to find the side lengths of the smaller triangle. Explain.
- How are the areas of the triangles related?

Find a fraction equivalent to the terminating decimal.

29. 0.35 30. 2.1456 31. 89.050

For Exercises 32–34, tell whether the statement is *true* or *false*.

32. $0.06 = \sqrt{0.36}$ 33. $1.1 = \sqrt{1.21}$ 34. $20 = \sqrt{40}$